

WHAT IS CLAIMED IS:

1. A control apparatus for an electric railcar,
comprising:

an electric power converter for driving a motor;

5 a means for detecting the rotational speed of said motor;
and

such a control means for said electric power converter
that provides control so that when the rotational speed
of said motor decreases below the required value, the torque
10 of said motor will decrease at the required rate of change,
wherein said control apparatus is characterized in that
it further has

a means for providing control so that when the rotational
speed of said motor reaches the speed region of the required
15 speed or less during retardation, the torque of said motor
will be smaller than the specified torque value existing
when the rotational speed of said motor decreases below
the required value; and

a means for providing control so that the carrier
20 frequency at which PWM signals are created during the control
of the switching elements constituting said electric power
converter will be lower than the carrier frequency existing
when the rotational speed of said motor decreases below
the required value.

25 2. A control apparatus for an electric railcar,
comprising:

an electric power converter for driving a motor;
a means for detecting the rotational speed of said motor;
and

such a control means for said electric power converter
5 that provides control so that when the rotational speed
of said motor decreases below the required value, the torque
of said motor will decrease at the required rate of change,
wherein said control apparatus is characterized in that
it further has a means for providing control so that when
10 the rotational speed of said motor reaches the speed region
of the required speed or less during retardation, the torque
of said motor will be smaller than the specified torque
value existing when the rotational speed of said motor
decreases below the required value.

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comprising:

an electric power converter for driving a motor;
a means for detecting the rotational speed of said motor;
and

20 such a control means for said electric power converter
that provides control so that when the rotational speed
of said motor decreases below the required value, the torque
of said motor will decrease at the required rate of change,
wherein said control apparatus is characterized in that
25 it further has a means for providing control so that when

the rotational speed of said motor decreases below the required value, the carrier frequency at which PWM signals are created during the control of the switching elements constituting said electric power converter will be lower
5 than the carrier frequency existing when the rotational speed of said motor decreases below the required value.